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This invention comprises deposition of thin film photovoltaic junctions on conductive foil substrates which can be heat treated following deposition in a continuous fashion without deterioration of the metal support structure. In a separate operation, an interconnection substrate structure is produced in a continuous roll-to-roll fashion. The conductive foil supported photovoltaic junction is then laminated to the interconnection substrate structure and conductive connections are deposited to complete the module or array. In this way the interconnection substrate structure can be uniquely formulated from polymer-based materials since it does not have to endure high temperature exposure. Furthermore, the photovoltaic junction and its conductive foil support can be produced in bulk without the need to use the expensive and intricate material removal operations currently taught in the art to achieve series interconnections.